NOAA FISHERIES

SWFSC / FRD

Theme VI: Communications

Does the assessment program adequately communicate its results, needs and research?

Suzanne Kohin / Sarah Shoffler

1) Are assessment data needs being communicated to survey scientists, advanced technology experts, and fisheries-dependent data sources; and have improved data resulted from these efforts?

2) Are assessment process and results adequately communicated to fishery managers, affected public and the scientific community?

Communicating Assessment Results and Data Needs

- **Domestic**
  - Councils (PFMC, WPFMC)
  - State Fisheries Agencies (CDFW, ODFW, WDFW)
  - Pacific States Marine Fisheries Commission (PSMFC)
  - Industry
  - Public
  - Non-governmental Organizations
  - Academia / Science Community
  - West Coast Regional Office
  - NOAA Headquarters
  - NOAA National Working Groups
  - NWFSC scientists and program leaders
  - PIFSC scientists and program leaders

Communicating Assessment Results and Data Needs

- **International**
  - **Bordering Neighbors**
    - Trinational Sardine Forum
    - MexUS-Pacifico
    - Trinational Basking Shark Workgroup
    - Technical Subcommittee of the Canada-U.S. Groundfish Committee
  - **North Pacific / Pacific**
    - International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean (ISC)
    - Inter-American Tropical Tuna Commission (IATTC)
    - Western and Central Pacific Fisheries Commission (WCPFC) Science Committee and Northern Committee

Stakeholders and Collaborators

Domestic –
Councils, State Fish/Game,
West Coast Regional Office

International –
Pacific and North
Pacific

Academia

International –
Trinational and
Binational

Public

SWFSC
Assessment
Staff

Industry –
Recreational and
Commercial

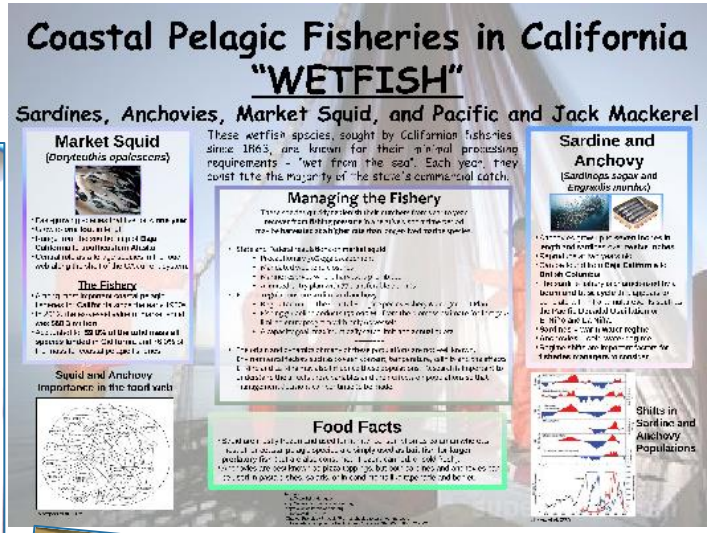
SWFSC, NWFSC and
PIFSC survey, advanced
sampling, biology and
assessment staff

NGOs

Example communications

- Scoping/planning meetings (prior to completing assessments)
- Assessment meetings (prior to completing assessments)
- Stock assessment reports (every 1-5 years depending upon species)
- Review panels (following the assessments)
- Council meetings (5 per year)
- NOAA HQ: FSSI, SIS, and FishWatch.gov (updated when new assessment results are available)
- Public events / scientific meetings (many per year)

Outreach and Public Events

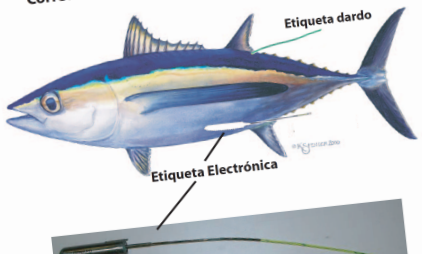


$500 de RECOMPENSA

La Fundación Científica de Pescadores Americanos (AFRF) en cooperación con el Servicio Nacional de Pesquerías Marinas de los Estados Unidos (NMFS) implantaron etiquetas electrónicas en atunes albacora (Tunnus alalunga) que fueron liberados en el océano Pacífico Norte. Los peces con etiquetas pueden ser identificados por la presencia de una etiqueta dardo de color verde (en el lomo del pez junto a la segunda aleta dorsal) y una varilla de plástico saliendo de la parte de atrás del vientre (mirar el dibujo). Una recompensa de $500 dólares americanos será pagada por cada etiqueta electrónica que sea regresada junto con la etiqueta dardo, fecha y lugar (latitud y longitud) de captura, y una descripción del equipo de pesca utilizado.

La recompensa puede ser reclamada al regresar las etiquetas y la información a:

National Marine Fisheries Service
Southwest Fisheries Science Center
8604 La Jolla Shores Dr.
La Jolla, CA 92037
USA
Teléfono: 1 858 546 7192
Correo Electrónico: John.Childers@noaa.gov



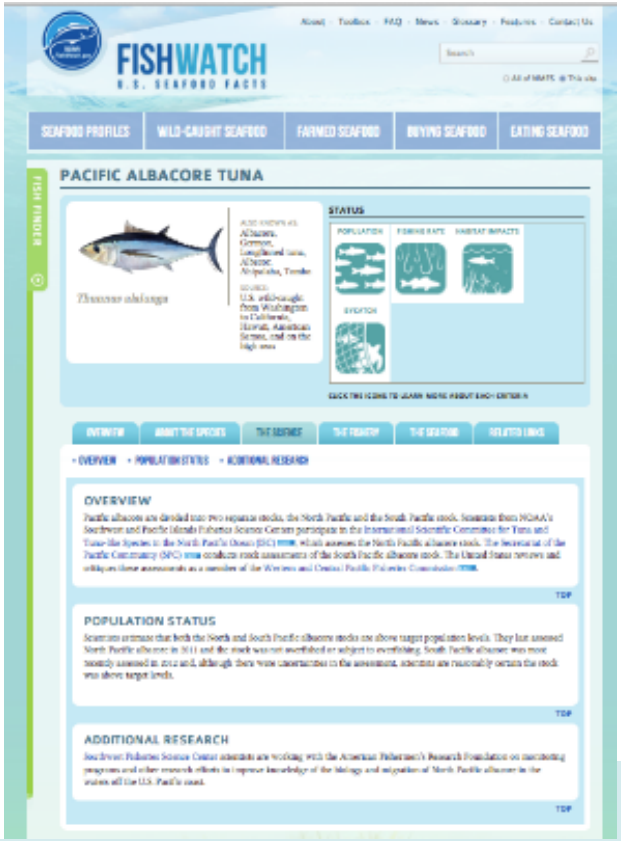
Western Fishboat Owners Association
American Fishermen's Research Foundation
Annual General Meeting and Convention
March 25-28, 2012 / Holiday Inn Express - Astoria, OR

6:00 - 10:00 PM **RECEPTION / DINNER / RAFFLE** Red Loft, Top Floor Red Bldg 1/3 mi West of Hotel – Dinner by Chef Eric Jenkins

Speaker/s: Dr. Suzanne Kohin – NOAA/NMFS SWFSC, Dr. Vidar G. Wespestad – AFRF Science Consultant – "Making Albacore Stock Status and Assessments Understandable" (Subject to Modifications)

Example Websites highlighting assessment and research results and data needs

http://www.pcouncil.org/
http://www.iattc.org/
http://www.wcpfc.int/
http://isc.ac.affrc.go.jp/
http://www.nmfs.noaa.gov/sfa/fisheries_eco/status_of_fisheries/status_updates.html
https://www.wildlife.ca.gov/
http://www.dfw.state.or.us/
http://wdfw.wa.gov/
http://www.psmfc.org/
http://www.recfin.org/
http://www.fishwatch.gov
http://www.californiafisheriesfund.org
http://www.californiawetfish.org
http://www.californiasportfishing.org/
http://pacificalbacore.com/wfoa/
http://www.afrf.org/
http://www.americanalbacore.com/
http://psrc.mlml.calstate.edu/current-research/basking-shark
http://www.fishtrack.com/live-track/
https://swfsc.noaa.gov/albacore_tag/
http://swfsc.noaa.gov/baskingshark



Schedule / Process

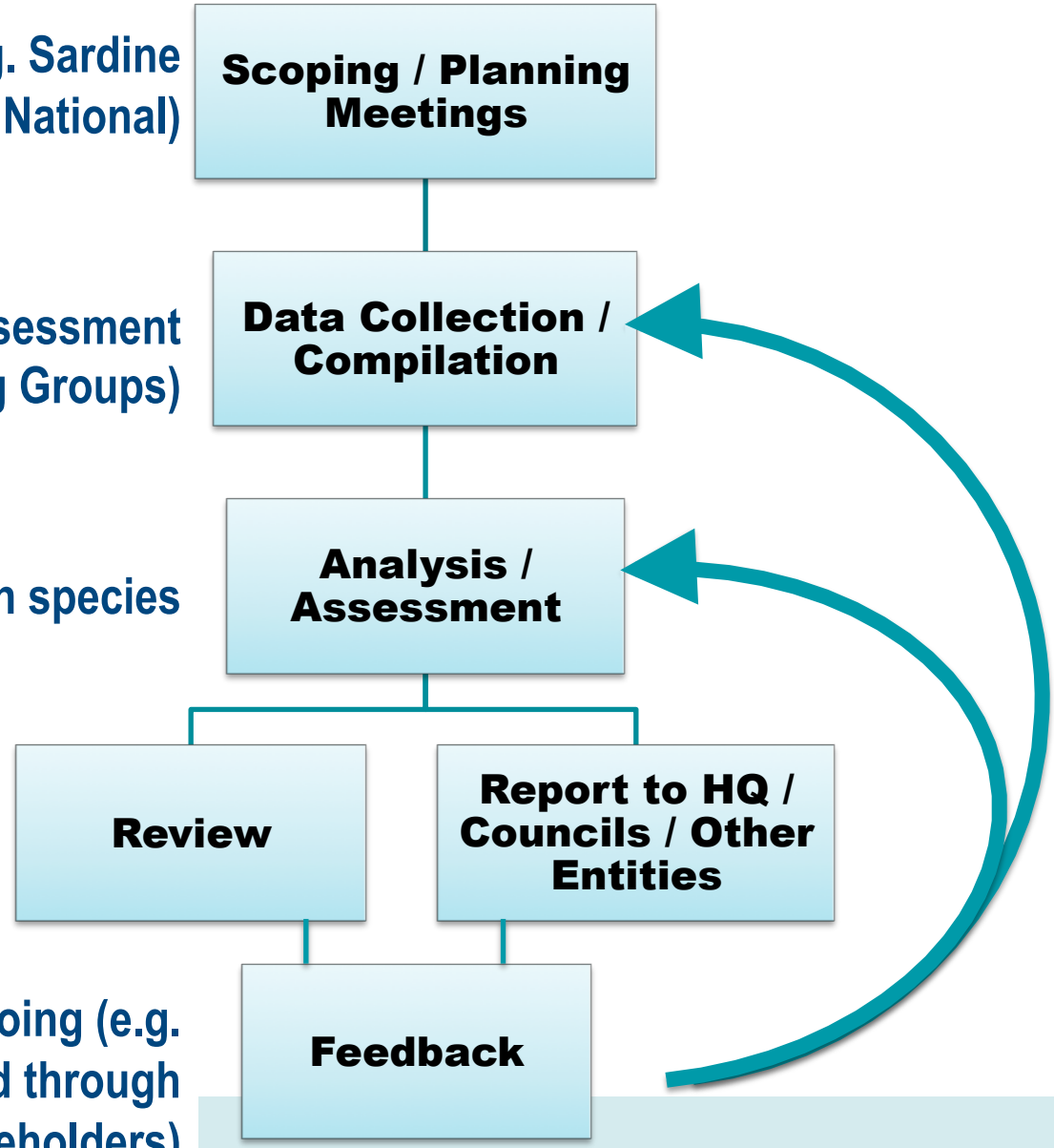
Annually or more frequently (e.g. Sardine TriNational)

Several times/year before assessment (e.g. ISC Working Groups)

Every 1-5 years depending upon species

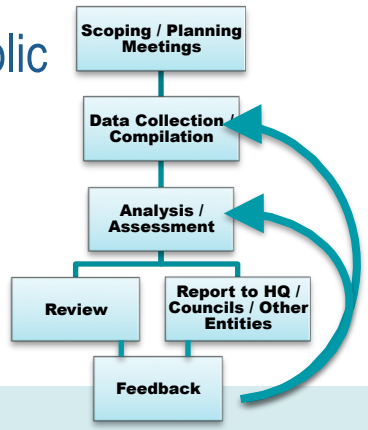
Following assessments

Following assessments and ongoing (e.g. Council Meetings (5 /year) and through outreach to stakeholders)



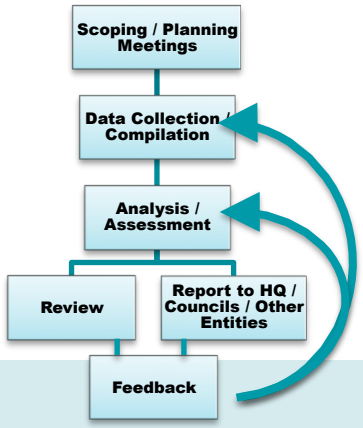
Example (1) – Pacific Sardine

- **Planning Meetings (annually):** TriNational Sardine Forum and regular workshops organized through MexUS-Pacifico including ageing workshops
- **Data Collection/Compilation (ongoing):** standardized port sampling protocols for the 3 US states and British Columbia; standardized ageing methods across labs to use new catch-at-age data for Mexico; implemented an expanded aerial survey for potential use
- **Analysis/Assessment (every year full or update):** incorporation of lab-specific ageing error vectors in the latest assessment
- **Review (following assessment):** Pacific Council's STAR Panel Review ensured the analyses were robust and provided recommendations for further improvements
- **Report to HQ / Councils / Other Entities (following assessment):** PFMC, PFMC advisory bodies including constituents and stakeholders (CWPA)
- **Feedback (following assessment and intermittent):** Reviewer and Public comment at STAR Panel Review; Public comment through PFMC and Federal Register; PFMC advisory bodies publish *Research and Data Needs Document* every 5 years; Intermittent feedback by constituents



Example (2) – Nearshore Groundfish: China, Copper and Brown Rockfishes

- **Planning Meeting:** Data and modeling workshop with PFMC advisory bodies (SSC, GAP and GMT), State fishery managers (CDFW, ODFW, WDFW), Constituents
- **Data Collection/Compilation:** support from Marine Recreational Information Program (MRIP) to develop relational database of onboard CPFV observer data
- **Analysis/Assessment:** Novel methods for developing fishery-dependent indices used in assessments (as no fishery independent surveys exist for these stocks)
- **Review:** Pacific Council's STAR Panel Review ensured the analyses were robust and provided recommendations for further improvements
- **Report to HQ / Councils / Other Entities:** PFMC, PFMC advisory bodies including constituents and stakeholders
- **Feedback:** Reviewer and Public comment at STAR Panel Review; Public comment through PFMC and Federal Register; PFMC advisory bodies publish *Research and Data Needs Document* every 5 years; Intermittent feedback by constituents

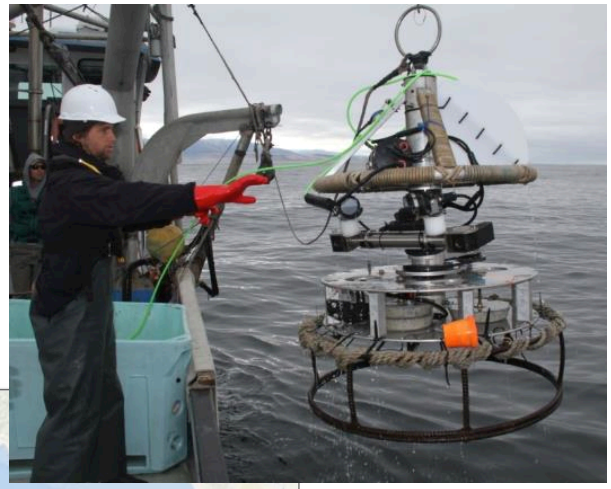


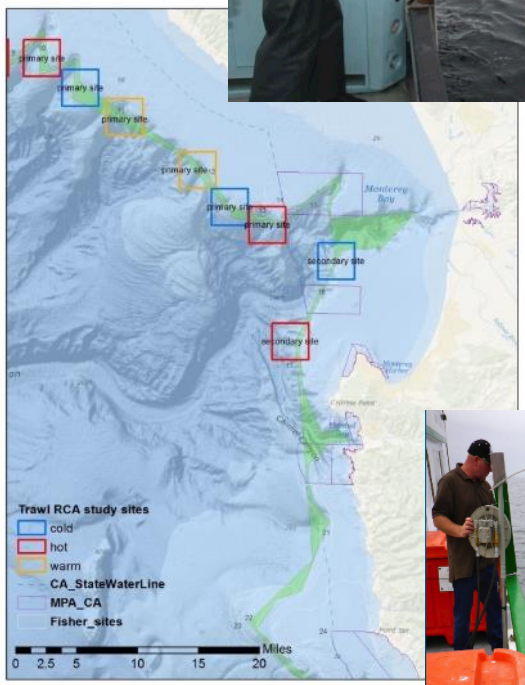
Incorporating Stakeholder Recommendations into Data Collection / Compilation

- **Exempted Fishing Permits (EFPs)**
  - Annual solicitation and approval by the PFMC
  - Developed by scientists and industry to fill data gaps and provide fishing opportunity
- **Cooperative Research**
  - Annual solicitation of research ideas
  - Partners work with scientists to refine project protocols including sampling and experimental design
  - Internal and external review to identify high priority projects and allocate funds to address assessment or management needs
  - Scientists and industry partners work side-by-side to achieve project goals

Improving groundfish data collection through an EFP

- Spatial analysis of the distribution and size of rebuilding stocks in the Rockfish Conservation Area (RCA) through directed fishing surveys
- PFMC approved EFP, supported by The Nature Conservancy, Sea Grant and Others
- Compare catch rates to visual surveys and predictive models to better define hotspots and coldspots for overfished species bycatch
- Overall objectives: provide fishing opportunities on healthy stocks within existing RCAs and improve/enhance survey and fishery-dependent data sources





Some Recent SWFSC Cooperative Research Projects

- Partnering fecundity studies with CPFV monitoring to improve rockfish stock assessments
- An assessment of the response of rockfish populations to Rockfish Conservation Area closures in Central California
- Evaluation of recompression techniques to reduce rockfish (genus *Sebastes*) bycatch mortality in recreational fisheries
- Southern California nursery area longline survey for pre-recruit common thresher sharks
- Southern California juvenile shortfin mako and blue shark survey
- SWFSC cooperative tuna research

Cooperative Research to improve rockfish assessments

- **Partnering fecundity studies with CPFV monitoring to improve rockfish stock assessments**
- **An assessment of the response of rockfish populations to Rockfish Conservation Area closures in Central California**

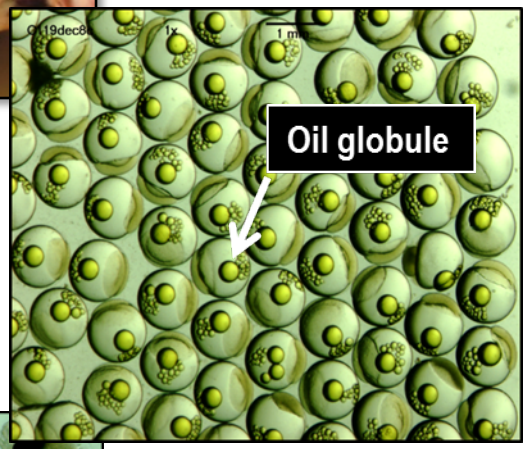
SWFSC PIs: Susan Sogard, John Field and Sabrina Beyer
In Collaboration with Rick Starr (Moss Landing Marine Lab), Dan Howard (Cordell Bank National Marine Sanctuary), Deb Wilson- Vandenberg (California Department of Fish and Wildlife), Tom Mattusch (Coastside Fishing Club, F/V Hulicat) and Roger Thomas (Golden Gate Fishermen's Association, F/V Salty Lady) and a cast of dozens more…

Collections and observations of mature rockfish

Rockfish Species	Females	Males	Total Fish	Number of Females with Fecundity Samples* Collected	Counted
Bank	5	2	7	2	2
Blackgill	389	265	654	84	75
Blue (undifferentiated)	15	4	19	6	0
"Northern" Blue	60	24	84	25	9
"True" Blue	90	14	104	44	7
Bocaccio	77	38	115	13	9
Brown	133	73	206	19	19
Canary	53	19	72	8	8
Chilipepper	1135	391	1526	407	391
China	6	6	12	3	0
Copper	5	0	5	5	0
Flag	4	2	6	1	0
Gopher	4	0	4	3	1
Greenspotted	18	3	21	6	2
Greenstriped	2	1	3	1	0
HalfBanded	9	0	9	5	0
Olive	25	12	37	8	0
Pinkrose	3	0	3	3	0
Rosy	40	31	71	18	10
Shortbelly	8	5	13	5	5
Silvergray	0	1	1	0	0
Speckled	132	14	146	47	46
Squarespot	56	4	60	41	39
Starry	9	6	15	3	1
Stripetail	14	4	18	9	6
Swordspine	4	0	4	3	0
Unknown	1	0	1	1	0
Vermilion	28	18	46	13	10
Widow	97	21	118	31	5
Yelloweye	2	0	2	1	1
Yellowtail	765	333	1098	199	168
Grand Total	**3189**	**1291**	**4480**	**1014**	**815**

* 2 -5 subsamples of eggs or larvae collected from each female

Ovary with eyed-larvae



Fertilized eggs

Eyed-larvae

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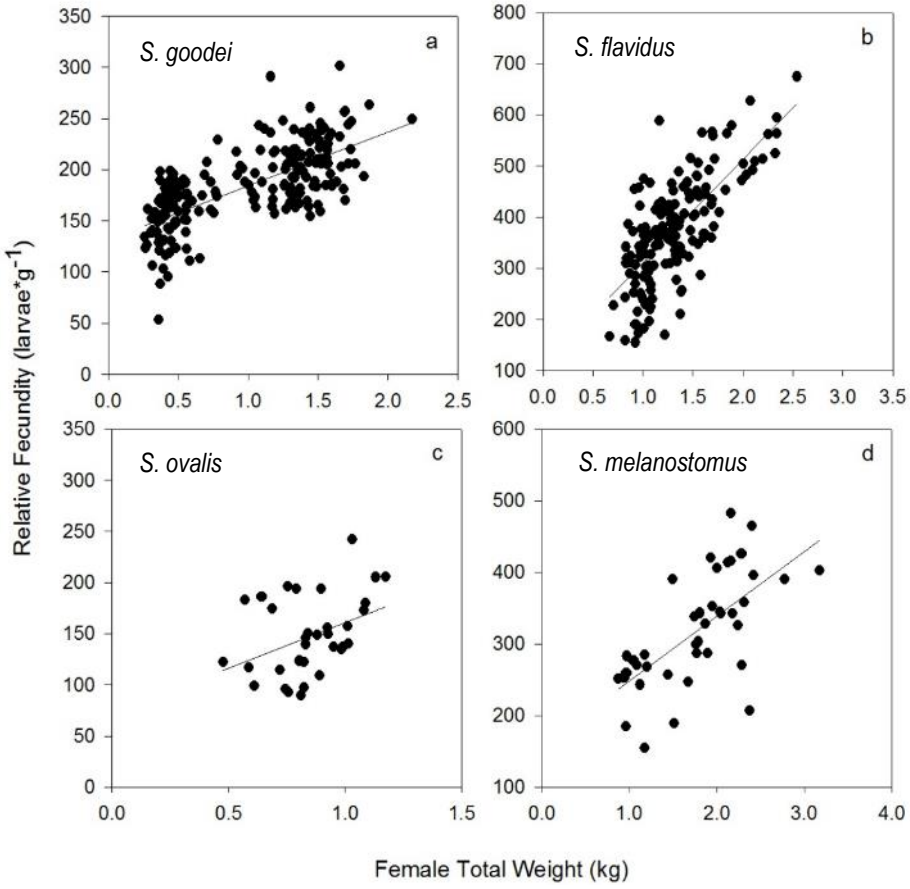
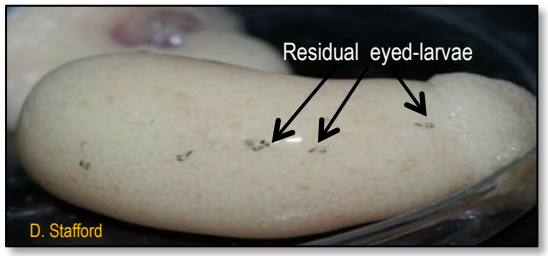
Relative fecundity relationships



Chilipepper

Yellowtail rockfish

Blackgill rockfish

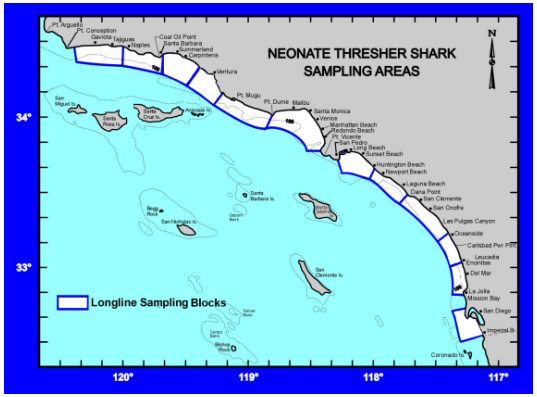


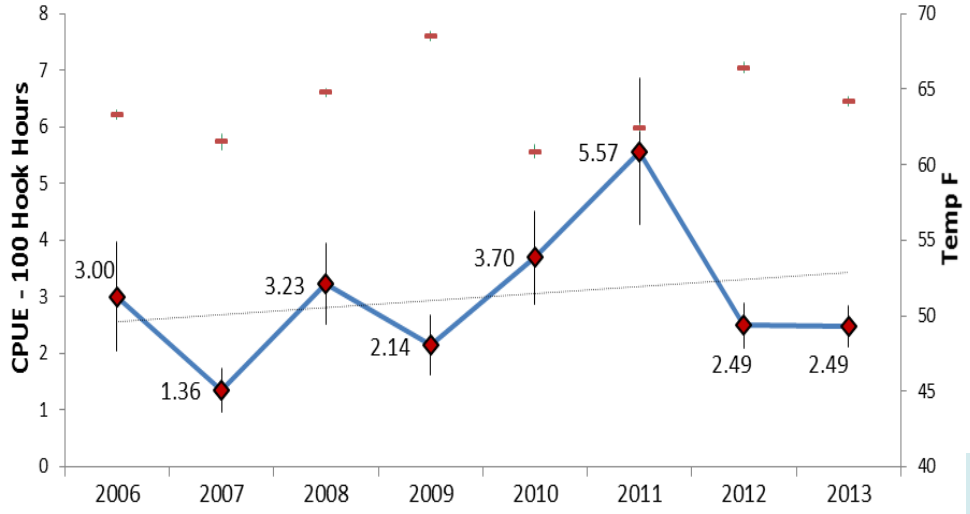
Multiple broods: Speckled rockfish

Data used in 2011 blackgill assessment (Beyer *et al.* 2014) and will be used in next chilipepper assessment (no size dependent fecundity in current model)

Southern California nursery area longline survey for pre-recruit common thresher sharks

- Survey conducted every year starting in 2003, with consistent methodology since 2006
- Charter conducted in September aboard chartered commercial longline F/V *Outer Banks*
- Survey tracks trends in abundance of neonate thresher sharks as an index of reproductive female sharks; tagging and biological studies are conducted
- Data will be used along with U.S. and Mexico fishery data in a collaborative bilateral assessment (2015)





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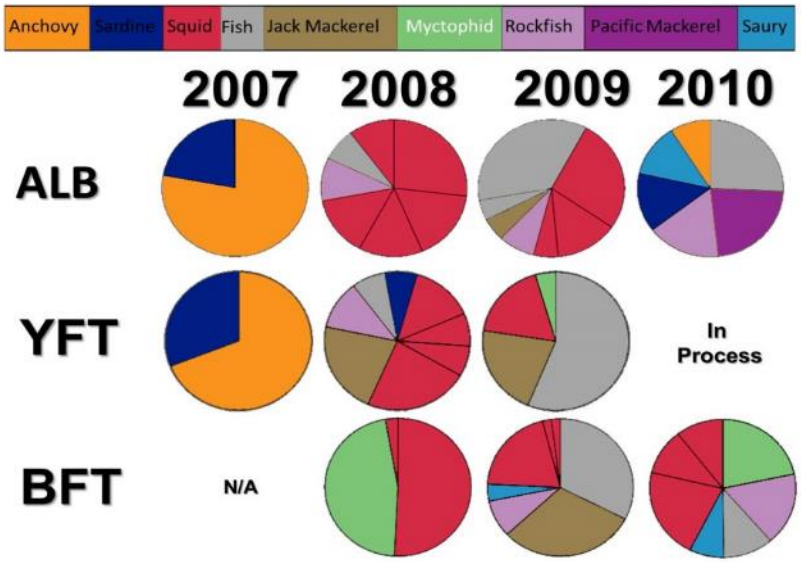
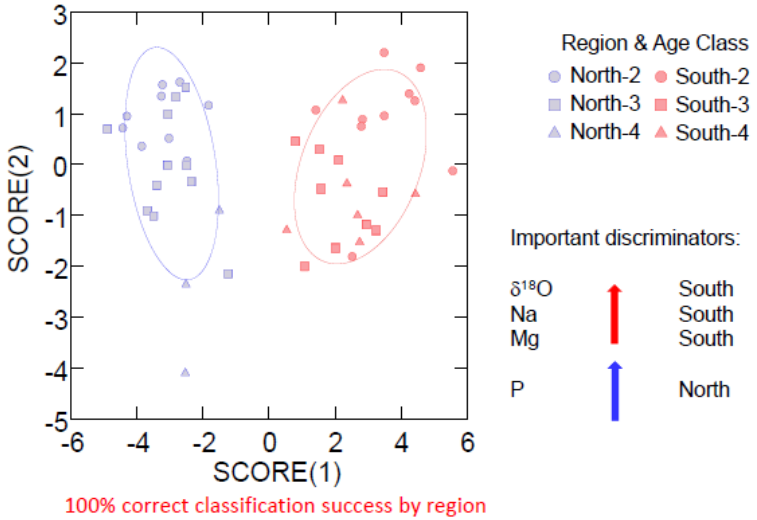
SWFSC Cooperative Tuna Research

- Sampling of tunas in Southern California and Pacific Northwest waters
- Studies include age and growth, foraging ecology, reproductive state and stock structure
- Albacore otolith data was used in the 2011 and 2014 ISC albacore stock assessments
- Albacore electronic tagging near Hawaii and off Pacific Northwest
- Albacore electronic tagging data used to understand age-specific stock dynamics
- Significant outreach effort to the commercial and recreational fishing communities
- Partners include commercial albacore troll and pole-and-line fishers, Southern California CPFV fleet, Monterey Bay Aquarium and Texas A&M University

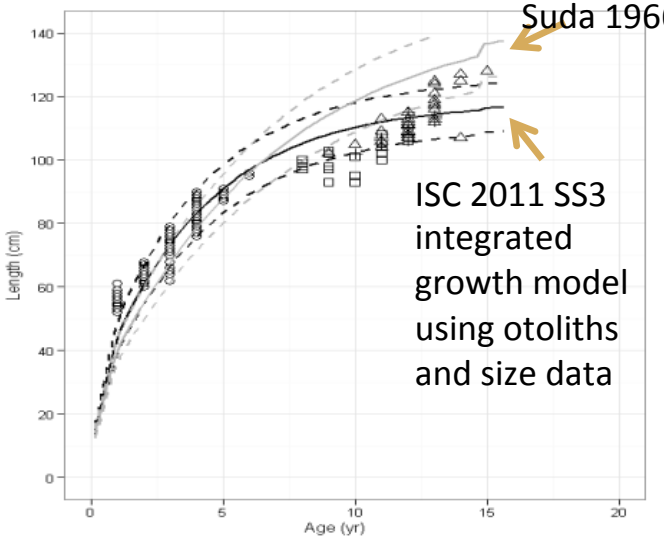


Results - stable isotopes + trace elements



100% correct classification success by region

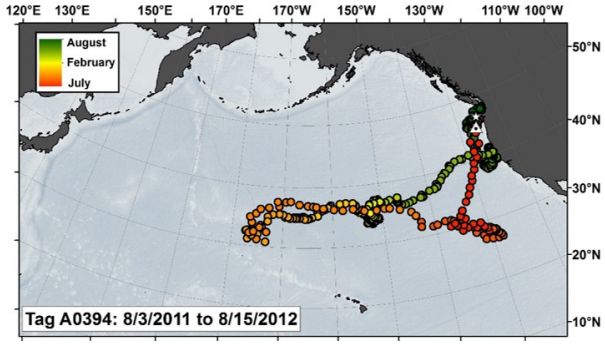
Species	2007	2008	2009	2010	2011	2012
Pacific Bluefin	0	75	78	54	189	294
Albacore: Washington/ Oregon	0	0	42	191	49	60
Albacore: Central California	0	0	0	0	27	31
Albacore: Southern California	116	35	93	118	7	62
Yellowfin	15	45	95	71	128	132
Skipjack	0	5	9	8	15	16

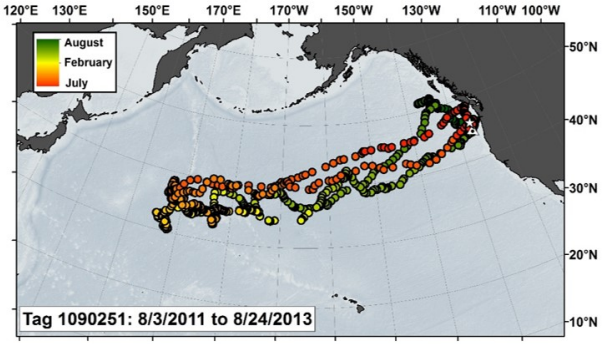


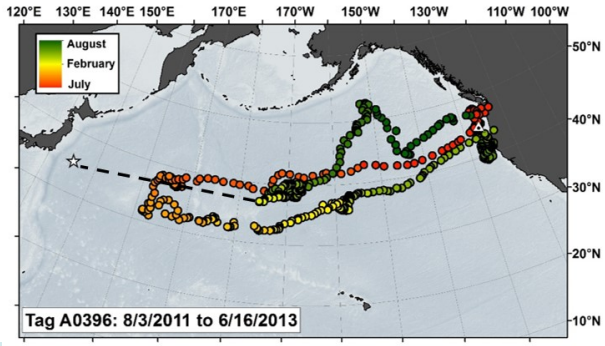
Albacore Archival Tagging

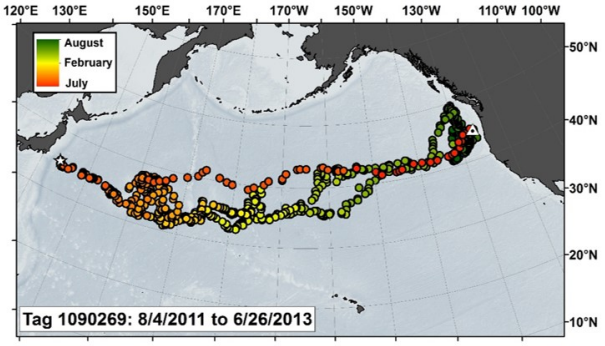
- To improve/validate movement models and stock structure assumptions, standardized abundance indices

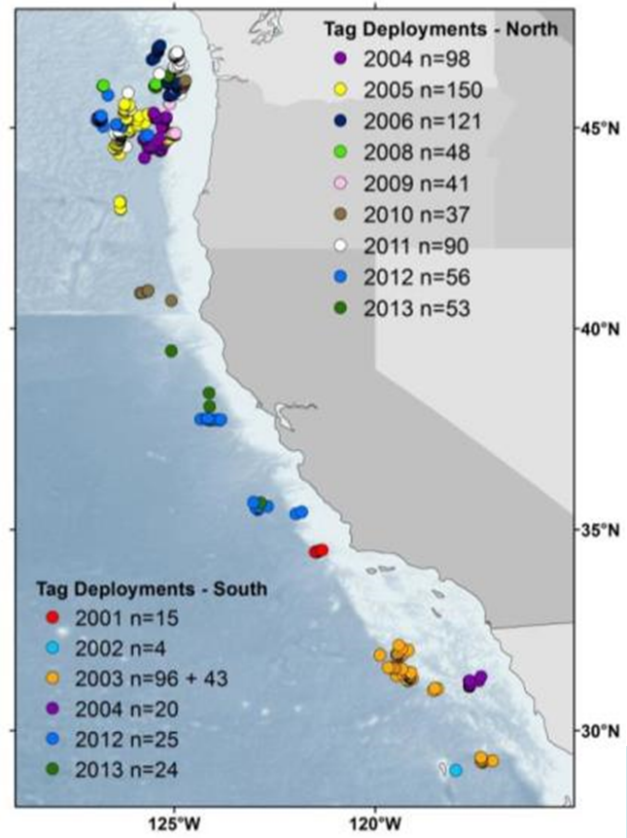
Recent recoveries of four fish from the same school - tagged August 3-4, 2011











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Strengths

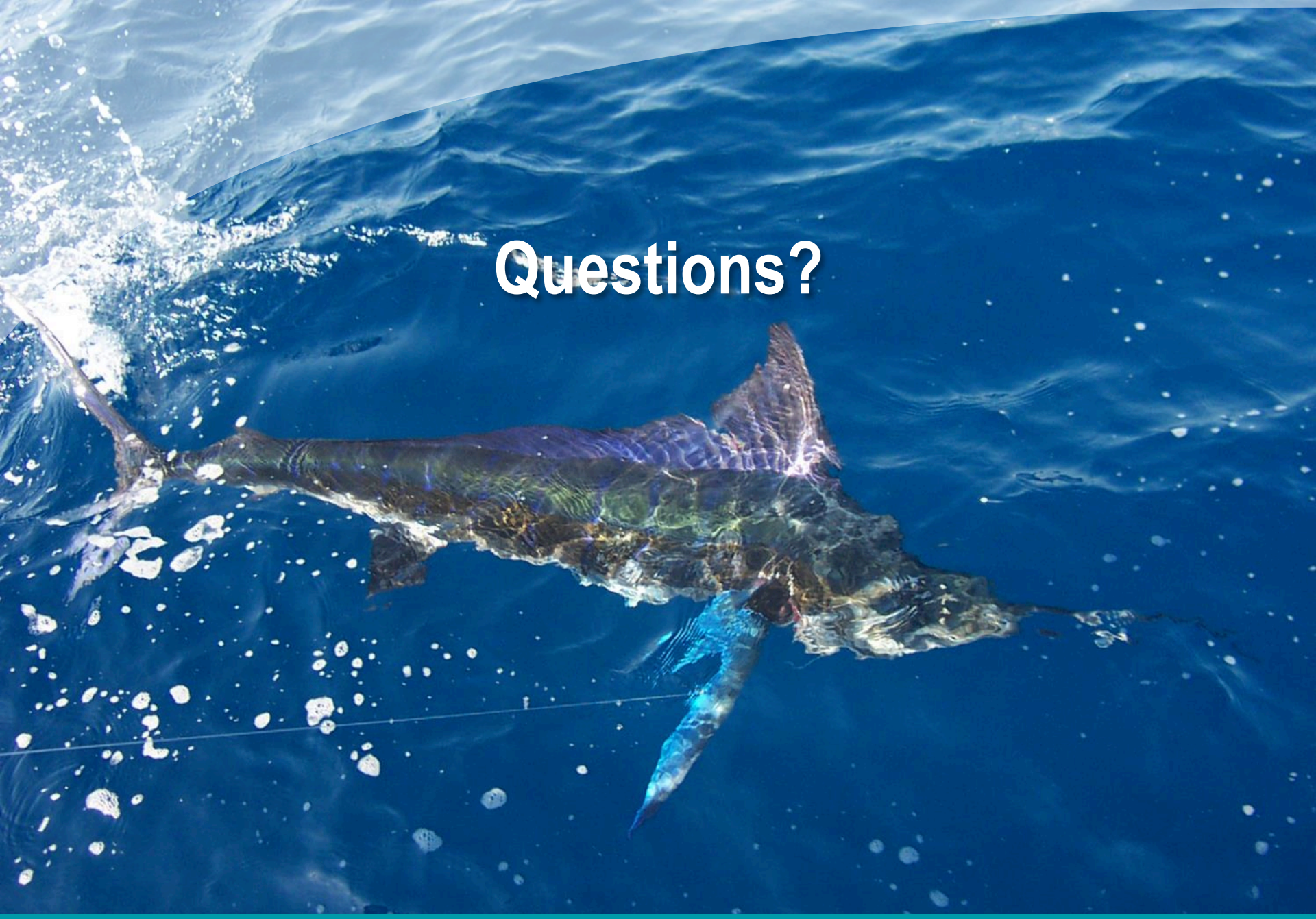
- Regular and open communications with industry, Council, international organizations and partners, and academia
- End products evolve and improve as the process transpires (e.g. based on feedback during the assessment process)
- Stakeholders communicate advice to scientists regularly

Challenges

- Limited time/capacity to translate stock assessment results for the public and non-scientific stakeholders
- Potential conflict of interest in some stakeholder groups which may interfere with them communicating the best available science
- Some collaborators are not local (i.e. international and/or in different states)
- Increasing travel restrictions limit in-person meetings and interactions

Strategies

- Create new SWFSC Stock Assessment webpage for easy access to all SWFSC assessments
- Capitalize on existing communication resources (e.g. NOAA and outside partner webpages)
- Have more dedicated staff for outreach and communications
- More online meetings


Questions?